1. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

   Less than 9 units from the number 7.

   A. $(2, 16)$

   B. $(-\infty, 2] \cup [16, \infty)$

   C. $(-\infty, 2) \cup (16, \infty)$

   D. $[2, 16]$

   E. None of the above

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2. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

   $$-8x + 5 > -3x - 8$$

   A. $(-\infty, a)$, where $a \in [-5.6, -1.6]$

   B. (a, ∞), where $a \in [-6.6, 0.4]$

   C. $(-\infty, a)$, where $a \in [-0.4, 8.6]$

   D. (a, ∞), where $a \in [-2.4, 5.6]$

   E. None of the above.

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3. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

   $$5 - 4x < \frac{-19x - 6}{8} \leq 5 - 3x$$

   A. $(-\infty, a] \cup (b, \infty)$, where $a \in [3, 5.25]$ and $b \in [8.25, 11.25]$

   B. $(-\infty, a) \cup [b, \infty)$, where $a \in [1.5, 7.5]$ and $b \in [8.25, 12.75]$

   C. $(a, b]$, where $a \in [0.75, 7.5]$ and $b \in [9, 13.5]$

   D. $[a, b)$, where $a \in [1.5, 7.5]$ and $b \in [5.25, 13.5]$

E. None of the above.

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4. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-9 + 7x \leq \frac{46x + 5}{6} < -3 + 7x$$

A. $(a, b]$, where $a \in [13.5, 17.25]$ and $b \in [-0.75, 10.5]$

B. $[a, b)$, where $a \in [12, 22.5]$ and $b \in [4.5, 6.75]$

C. $(-\infty, a) \cup [b, \infty)$, where $a \in [9.75, 15.75]$ and $b \in [3, 7.5]$

D. $(-\infty, a] \cup (b, \infty)$, where $a \in [9.75, 16.5]$ and $b \in [-1.5, 6.75]$

E. None of the above.

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5. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{5}{5} - \frac{6}{8}x > \frac{10}{4}x + \frac{9}{2}$$

A. $(-\infty, a)$, where $a \in [-3, -0.75]$

B. $(-\infty, a)$, where $a \in [0, 3.75]$

C. (a, ∞), where $a \in [-3.75, 0.75]$

D. (a, ∞), where $a \in [0, 3.75]$

E. None of the above.

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6. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-8 + 6x > 8x \text{ or } 4 + 6x < 8x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [-2.25, 3]$ and $b \in [3, 4.35]$

B. $(-\infty, a) \cup (b, \infty)$, where $a \in [-11.25, -3]$ and $b \in [1.88, 2.92]$

C. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.2, -2.17]$ and $b \in [0.6, 2.7]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [-3.45, -0.22]$ and $b \in [2.4, 4.35]$

E. $(-\infty, \infty)$

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7. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$\frac{7}{7} + \frac{4}{9}x > \frac{5}{4}x - \frac{4}{6}$$

A. (a, ∞), where $a \in [-5.25, 0]$

B. (a, ∞), where $a \in [1.5, 3.75]$

C. $(-\infty, a)$, where $a \in [0.75, 2.25]$

D. $(-\infty, a)$, where $a \in [-5.25, 0]$

E. None of the above.

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8. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-3 + 4x > 5x \text{ or } -4 + 4x < 7x$$

A. $(-\infty, a) \cup (b, \infty)$, where $a \in [0, 2.25]$ and $b \in [0, 4.5]$

B. $(-\infty, a] \cup [b, \infty)$, where $a \in [-4.5, -0.75]$ and $b \in [-1.43, 0.9]$

C. $(-\infty, a) \cup (b, \infty)$, where $a \in [-4.5, -2.25]$ and $b \in [-2.25, 1.5]$

D. $(-\infty, a] \cup [b, \infty)$, where $a \in [0, 7.5]$ and $b \in [0.15, 3.82]$

E. $(-\infty, \infty)$

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9. Using an interval or intervals, describe all the x-values within or including a distance of the given values.

No more than 4 units from the number 8.

A. $(-\infty, -4) \cup (12, \infty)$

B. $[-4, 12]$

C. $(-\infty, -4] \cup [12, \infty)$

D. $(-4, 12)$

E. None of the above

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10. Solve the linear inequality below. Then, choose the constant and interval combination that describes the solution set.

$$-4x + 9 < 3x - 3$$

A. $(-\infty, a)$, where $a \in [0.9, 2.2]$

B. (a, ∞), where $a \in [-5.71, 1.29]$

C. $(-\infty, a)$, where $a \in [-2.4, 0.2]$

D. (a, ∞), where $a \in [1.71, 6.71]$

E. None of the above.
